

Appln No. 09/878,054

Amdt date November 30, 2004

Reply to Office action of September 3, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-25. (Cancelled)

26. (Previously Presented) A crosspoint switch unit comprising:

a first set of transmission lines;

a second set of transmission lines selectively coupled to the first set of transmission lines;

an amplifier chain coupled to the first set of transmission lines;

a passive network coupled to the amplifier chain;

wherein the amplifier chain comprises a differential signal path having a first signal path and a second signal path and wherein the passive network comprises:

a first capacitance;

a second capacitance;

a first resistance;

a second resistance;

wherein the first resistance is coupled to the first capacitance in a first series path and the second resistance is coupled to the second capacitance in a second series path with the first series path coupled to the first signal path and the second series path coupled to the second signal path; and

a shunt resistance with predetermined resistance shunting the first series path to the second series path;

Appln No. 09/878,054

Amdt date November 30, 2004

Reply to Office action of September 3, 2004

wherein the first and second resistance, the first and second capacitance and the shunt resistance are fabricated on a monolithic integrated circuit substrate, and at least one of the first and second resistance, the first and second capacitance and the shunt resistance is one of segmented, programmable, and a combination thereof; and

wherein an impedance of the at least one of the first and second resistance, the first and second capacitance and the shunt resistance is selectable after being fabricated on the monolithic integrated circuit substrate.

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Previously Presented) The unit of claim 26 wherein an impedance corresponding to the first capacitance at a first corner frequency is approximately equal to an impedance corresponding to the first resistance and the impedance corresponding to the first capacitance at a second corner frequency is approximately equal to an impedance corresponding to the predetermined resistance of the shunt resistance.

31. (Previously Presented) The unit of claim 30 wherein the impedance corresponding to the first capacitance is greater than the impedance corresponding to the first resistance at low frequencies generally less than the first corner frequency, and the impedance corresponding to the first capacitance is greater than the impedance corresponding to the shunt resistance at high frequencies generally greater than the second corner frequency.

Appln No. 09/878,054

Amdt date November 30, 2004

Reply to Office action of September 3, 2004

32. (Previously Presented) The unit of claim 30 wherein the impedance corresponding to the first capacitance is approximately defined at the low frequencies by the relationship between the predetermined resistance of the shunt resistance, R_P , and resistance of the first resistance and the second resistance, $RS1$ and $RS2$:

$$\frac{R_P}{(R_P + RS1 + RS2)}; \text{ and}$$

the impedance corresponding to the first capacitance is approximately unity at higher frequencies.

33. (Previously Presented) The unit of claim 30 wherein the amplifier chain has a frequency response in a passband from the first corner frequency to the second corner frequency, wherein impedance values corresponding to the first capacitance in the passband is representative of a precompensation network frequency response, and wherein the precompensation network frequency response is approximately the inverse of the frequency response of the amplifier chain.

34. (Cancelled)

35. (Previously Presented) A crosspoint switch unit comprising:

a switch module;

a passive network having a predefined precompensation frequency response and coupled to the switch module;

wherein the passive network comprises:

Appln No. 09/878,054

Amdt date November 30, 2004

Reply to Office action of September 3, 2004

two series capacitors, each having a capacitance value approximately equal to a predefined capacitance value;

two series resistors, each having a resistance value approximately equal to a predefined series resistance value;

a shunt resistor having a resistance value approximately equal to a predefined shunt resistance value;

wherein one of the two series resistors is coupled to one of the two series capacitors in a first series path and another one of the two series resistors is coupled to another one of the two series capacitors in a second series path;

wherein the first series path is parallel to the second series path and wherein shunt resistor shunts the first series path to the second series path;

wherein the first series path is coupled to a first differential signal path and the second series path is coupled to a second differential signal path; and

wherein at least one of the two series resistors, the two series capacitors, and the shunt resistor is one of segmented, programmable, and a combination thereof, and wherein an impedance value of the at least one of the two series resistors, the two series capacitors, and the shunt resistor is selectable after being fabricated on the circuit substrate.

36. (Previously Presented) The unit of claim 35 wherein the switch module comprises:

a circuit substrate; and

a plurality of transmission lines coupled to the substrate;

wherein the passive network is fabricated on the substrate.

37. (Previously Presented) The unit of claim 36 wherein the switch module further comprises an amplifier section having a predefined amplifier frequency response and wherein the

Appln No. 09/878,054

Amdt date November 30, 2004

Reply to Office action of September 3, 2004

passive network provides a predefined precompensation frequency response tuned to a defined correspondence with the predefined amplifier frequency response.

38. (Cancelled)

39. (Previously Presented) The unit of claim 36 wherein the switch module comprises a first set of transmission lines and a second set of transmission lines orthogonal to the first set of transmission lines, and wherein the passive network is coupled to selected ones of the first set of transmission lines.

40. (Previously Presented) The unit of claim 39 wherein the transmission lines are differential transmission lines.

41. (Cancelled)

42. (Previously Presented) The unit of claim 35 further comprising an impedance corresponding to the predefined capacitance value at a first corner frequency being approximately equal to an impedance corresponding to the predefined series resistance value and the impedance corresponding to the predefined capacitance value at a second corner frequency being approximately equal to an impedance corresponding to the predefined shunt resistance value.

43. (Previously Presented) The unit of claim 42 further comprising the impedance corresponding to the predefined capacitance value being greater than the impedance corresponding to the predefined series resistance value at low frequencies generally less than the first corner frequency, and the impedance corresponding to the predefined capacitance value

Appln No. 09/878,054

Amdt date November 30, 2004

Reply to Office action of September 3, 2004

being greater than the impedance corresponding to the predefined shunt resistance value at high frequencies generally greater than the second corner frequency.

44. (Cancelled)